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ABSTRACT

The altercue continuum is a theoretical arrangement of oral reading responses which deviate from the expected responses, arranged according to their relationship to reading comprehension. Elements from miscue research, including phoneme-grapheme correspondence, serve as principles for organizing altercue types according to comprehension. Semantic acceptability, syntactic acceptability, and correction behavior are categories of altercue types. At one end of the altercue continuum are supercues, altercues that relate positively to comprehending; at the other end are pseudocues, relating negatively to comprehending. Between supercues and pseudocues are entropicues, altercues that exhibit no relationship to reading comprehension. Correlation coefficients are the results of establishing correlations between percentages of altercue types and indicators of comprehension scores on comprehension tests. Research on the basis of this model is possible, including research on the relation of altercues to each category of the taxonomy of oral miscues, to correction behavior, to phoneme-grapheme correspondence, and to grammatical categories. (Tables and references are included.) (DF)

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THE ALTERCUE CONTINUUM: THEORETICAL CONSIDERATIONS

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THE ALTERCUE CONTINUUM: THEORETICAL CONSIDERATIONS

Because reading comprehension is internal to the organism, unobservable, and difficult to measure; we need every scrap of evidence we can find to make inferences about a reader's comprehension. The altercue continuum is a theoretical arrangement of oral reading responses that deviate from the expected responses; responses that are commonly called miscues today. The arrangement of response types is theoretically based on the relationships of each response type to reading comprehension. The term, 'altercue,' represents the concept that a miscue is an alteration, and that alterations are not always undesirable. This idea underlies much of miscue research and becomes a point of sharp focus when comprehension performance is used as a gauge for classifying miscues. At one end of the altercue continuum are miscues that indicate good comprehension. At the other end of the continuum are miscues that indicate a lack of comprehension. Between the theoretical ends of the altercue continuum are miscues that bear no apparent relationship to reading comprehension.

If such a continuum exists, then we could organize to extract information about reading comprehension directly from oral reading performance in a way that is easily conceptualized. This could lead to the creation of a corroborative indicator of reading comprehension that could be easily managed and drawn directly from the language processing of the reader.

It is one thing to propose such a theory and another to

muster the empirical evidence that compels others to agree to its existence. Miscue research provides the theoretical and empirical groundbreaking for the construction of an altercue continuum. This paper attempts to identify the theoretical basis of the altercue continuum and describe directions for empirical studies in this area.

Theoretical Considerations

Oral reading responses that deviate from expected responses are called oral reading errors throughout most of the history of reading instruction (Weber, 1968). Not only are they called errors, but they are treated as errors, mistakes in processing printed language. The criterion for determining an error or mistake is simply the fact that it is not the response that complies exactly with the text as an observer perceives it.

With the advent of miscue research, Kenneth Goodman (1965) raises a deeper concern, a concern for comprehension. He suggests that comprehension is "... the only objective in reading ..." (K. Goodman, 1970, p. 28). Oral reading responses that deviate from the expected responses are called miscues by Goodman, indicating that the reader is miscuing to produce the deviant response. Subsequent research in analyzing miscues leads to the conclusion that it makes little sense to treat all miscues as errors if the criterion of an error is based on the degree to which the response relates to comprehension. Kenneth Goodman (1969) states "... all miscues are not bad ..." (p. 12), raising an issue that conflicts with the long tradition of treating deviations from

expectations as errors.

It appears to be quite true that some miscues are not bad if comprehension, rather than oral compliance with an expected spoken analogue is the criterion. To raise the concern for comprehension, another term can be used, the 'altercue.' The prefix, 'alter,' means, 'other,' noting the deviation from expectation, but emphasizing the idea that a criterion other than direct compliance to the text may be applied. Two different tasks are perceivable. In one task, the purpose is to create a spoken analogue that orally replicates the printed language of a passage. The other task, one to which the term, 'altercue,' can relate, is comprehension, the reconstruction of the message.

Theoretically, use of the criterion of comprehension to classify altercues establishes a finite realm of possibilities. Some altercues may indicate a lack of comprehension, while others may indicate good comprehension. A third possibility is that some altercues may be irrelevant to comprehension. A nominal categorization system might be appropriate, but, as Kenneth Goodman (1969) demonstrates repeatedly, a great number of different miscue types really do occur as people read orally. Therefore, no simple naming device fits the reality that has been encountered.

To cope with the complexity of variation in types of altercues, a theoretical device is required that can describe the degree of relationship between each possible type of altercue and comprehension. One solution to this problem, the solution we speculate upon here, is a continuum, a continuous series of categories that are related to one another on the basis of a single unifying principle. The altercue continuum is such a device.

To define the altercue continuum, we conceptualize several characteristics. The unifying principle is the relationship of each altercue type to comprehension. We can establish the extremes of the altercue continuum. At one end of the continuum are altercues that indicate that the reader is comprehending extremely well. Page (1974) calls altercues at the extreme end "supercues," to indicate good comprehension. Altercues at the other end of the continuum, "pseudocues," are altercues that indicate pseudoreading, poor comprehension, or a lack of comprehension. Somewhere between supercues and pseudocues are "entropicues," altercues that bear no relationship to comprehension (Page, 1978).

Figure 1 exhibits the relationship the altercue continuum depicts. Supercues, entropicues, and pseudocues are shown as benchmarks on the altercue continuum.

(INSERT FIGURE 1)

Comprehending

The unifying principle of the altercue continuum is the relationship of each altercue type to reading comprehension. For our purposes here, reading comprehension is defined as using prior knowledge to understand or make sense of printed language. Prior knowledge includes knowledge of language that may be inferred to be available to a reader because the reader is a speaker of the language, in this instance, English. Prior knowledge also includes other experientially based knowledge. This definition

is in accord with John Carroll's view: "The commonly accepted definition of comprehension is that it is a process of apprehending the 'meaning' of something - the 'meaning' of a word, of a phrase or idiom, of a sentence, or of a longer discourse" (John Carroll, 1972, p. 10).

In common usage, the term, 'reading comprehension,' is treated in some misleading ways. Comprehension is often treated as an object or possession, but in terms of our definition, it is a process. The terms, 'reading,' and 'comprehension,' are often used together, perhaps to distinguish comprehending printed language from comprehending other things; however, reading is comprehending printed language rendering the combination redundant in at least one sense. Comprehension is often treated as a subskill of reading, as though comprehension is a part of reading, but this describes the way batteries of tests are organized for convenience rather than the way comprehension is. Reading comprehension is often treated as though it is made up of subskills, but if a reader can make sense of printed language, whatever other skills or assumed subskills can be exhibited on tests remain something other than reading as we chose to define it here.

With these clarifications in mind, we proceed to treat reading as the process of comprehending printed language. The characteristics of the process are several. The process is internal. It takes place inside the organism. Because it is internal, it can not be observed. If comprehension can not be observed, it can not be measured directly. We face the prospect of limiting our conclusions about how another individual is processing printed language

to those ideas that can be inferred from what is observable. The history of testing reading is an array of attempts to create ingenious tasks that permit the inference that an individual is comprehending printed language. However ingenious as they may be, according to John Carroll (1972) "... most presently available tests do not permit a satisfactory assessment of the individual's 'absolute' level of comprehension ability" [p. 3].

Part of the difficulty with testing comprehension stems from the fact that it is internal, but the fact that it is a process is also a source of difficulties. Most of our tests labeled 'reading comprehension' involve tasks that take place after reading. They are post-reading or post-comprehending tests requiring that the subject remember as well as comprehend. The tasks themselves pose some difficulties. Most of our tests require writing, and some tests are complex in themselves and require understanding how to take the test. Most of our tests of comprehension confound the effects of memory and the task with the effect of comprehending. Even the straightforward approach of asking a subject to report whether or not or to what degree he or she comprehends a passage is complicated. For instance, in school situations, an adversary construct is assumable because the subject may assume that he or she has something to gain by reporting good comprehension, and indeed, the subject may be correct in this assumption. In short, we have reason to seek better ways of assessing how well a subject comprehends printed language. This is one of the basic reasons for pursuing the theory of an altercue continuum.

Oral reading generates responses while the reader is processing. We get very few in-process responses during silent reading.

Oral reading and silent reading differ in a number of ways, but the differences may be outweighed by the advantage we get of being able to observe how the reader is processing printed language. As long as we keep in mind the fact that oral and silent reading really do differ, then we can use and interpret what we can find out from observing oral reading as an in-process indicator. The altercue continuum theory provides a way of organizing our thinking about oral reading responses to permit focussing on the process of comprehending printed language.

Altercue Types

Comprehending printed language accounts for the unifying principle depicted on the left side of Figure 1. Now let us examine what theoretically might underlie the relationships on the right side of Figure 1, Altercue Types. Three systems of categorization lend themselves to an intuitive conceptualization of a continuum of relationships of altercues to comprehension: the semantic acceptability system, the syntactic acceptability system, and a system of categorizing correction behaviors.

The roots of the three categorization systems are identifiable in miscue analysis. Systems of cues are described in miscue research (P.D. Allen and D. Watson, 1976). The semantic cue system relates directly to meaning, and represents the basis of the semantic acceptability categorization in miscue research. The syntactic cue system relates to the arrangement of grammatical elements, and represents the basis of syntactic acceptability categorizations in miscue research. The categorization of

correction behaviors plays an important part in interpreting miscues and it lends itself to a theoretical interpretation.

The grapho-phonemic system relates to the mark-to-sound relationships that underlie the creation of a spoken analogue to printed language. The grapho-phonemic system is prominantly used in miscue analysis, but it does not lend itself to an intuitively clear interpretation in terms of relationships to comprehension. The grapho-phonemic characteristics of altercues must be investigated rather than logically deduced. Extensive categorization of miscues according to the grapho-phonemic system is available in miscue studies (K. Goodman and C. Burke, 1973).

Each of these systems has been used in a number of ways in miscue analysis. As a preliminary demonstration of how an altercue continuum might be fleshed out theoretically, we use aspects of the Goodman Taxonomy of Oral Reading Miscues. The most recent version is in P.D. Allen and D. Watson (1976). The aspects we select here are semantic acceptability, syntactic acceptability, and correction behavior.

The semantic acceptability of altercues is an important array of possible characteristics in relation to comprehension. Miscues or altercues are classified as semantically acceptable within the total passage, semantically acceptable within the total sentence, semantically acceptable with the prior or following portions of the sentence, and semantically unacceptable. Relationships between altercue types and comprehension may be represented theoretically by r: ranging from +1.00, supercues; through 0.00, entropicues; to -1.00, pseudocues. Theoretically, we expect

altercues that are sematically acceptable within the total passage to relate to comprehending in a positive way, perhaps nearer to +1.00, as indicators of good comprehending. Semantically unacceptable altercues are expected to relate to comprehending in a negative way, perhaps nearer to -1.00, as indicators of poor comprehending. Altercues that are semantically acceptable within the sentence are expected to be positive but less strongly related to comprehension than altercues that are semantically acceptable within the total passage, perhaps between +1.00 and 0.00 but nearer to 0.00. Partially semantically acceptable altercues, those acceptable with prior or following portions of the sentence, are expected to fall somewhere between altercues that are semantically acceptable within the sentence and semantically unacceptable altercues. Partially semantically acceptable altercues might be expected to be weakly negatively related to comprehending, perhaps between 0.00 and -1.00 but nearer to 0.00. Figure 2 depicts these theoretical relationships.

(INSERT FIGURE 2)

The syntactic acceptability of altercues parallels the array of possibilities exhibited by semantic acceptability categorizations. Miscue analysis provides for classifying miscues or altercues as syntactically acceptable within the total passage, syntactically acceptable with prior or following portions of the sentence, and syntactically unacceptable. As with semantic acceptability, the theoretical expectation is that the totally syntactically acceptable altercues will relate positively and more strongly to comprehending than the altercue that is syntactically acceptable

only within the sentence, both perhaps between +1.00 and 0.00. Similarly, altercues that are syntactically acceptable with prior or following portions of the sentence are expected to relate positively to comprehending less strongly than those acceptable only within the sentence, and negatively less strongly than those that are syntactically unacceptable, perhaps between 0.00 and -1.00. Figure 3 shows the speculated relationships between syntactic acceptability and comprehending.

(INSERT FIGURE 3)

Correction behavior represents an intuitively clear set of relationships to comprehending. Miscues can be classified in terms of the way the reader overtly attempts or does not attempt to correct. A totally successful correction is expected to be positively related to comprehending, between 0.00 and +1.00 and perhaps nearer to +1.00. A partially successful correction is expected to relate positively but less strongly to comprehending. A totally unsuccessful correction attempt is expected to be less strongly positive or possibly negative in its relationship to comprehending, between 0.00 and -1.00. No correction attempt is expected to exhibit a negative relationship to comprehending, perhaps between 0.00 and -1.00 correlatively. Page (1976, p. 93) provides a theoretical display of the possibilities of miscue correction behaviors. Figure 4 exhibits the array of possible expected relationships of correction behaviors to comprehending.

(INSERT FIGURE 4)

We are dealing only with overt correction attempts. It is a reasonable assumption that readers often correct silently, without

revealing their correction attempt. Introspectively, readers report this occurrence, and miscue research reveals instances where, within an oral reading of a passage, a miscue goes uncorrected and then, the same word or element is handled without a miscue later in the passage. Silent corrections warrant further study, both conceptually and methodologically.

Figures 2, 3, and 4 show the theoretical relationships of semantic acceptability, syntactic acceptability, and correction behavior to comprehending printed language. The speculations include what the correlation coefficients might be between altercue types and comprehension indicators. Specifically, the correlation coefficients we have in mind are those that would result from analysis that controls for grade level or age effects.

Relationships other than semantic and syntactic acceptability and correction behavior exist, but they can not be as easily deduced theoretically. The grapho-phonemic cue system represents an array of possible relationships. How do altercues that differ from the expected response in only one graphic letter or element relate to comprehending, in contrast with altercues that differ in two elements, three elements, or totally? How are differences in the beginning, middle, or end of a word related to comprehending? The complexity of the grapho-phonemic categories possible preclude an intuitive deduction, but they can be identified and tested.

Similarly, the various elements of the Goodman Taxonomy of Oral Reading Miscues can be assessed empirically. Phrase, clause, and sentence restructurings resulting from miscues are demonstrated to be categorizable using the theory of an altercue continuum. Focus on semantic acceptability, syntactic acceptability, and correction behavior barely scratches the surface of possibilities.

Recognizing the complexity of the possibilities of categorization generates two conclusions. First, for our purpose here, communicating the concept of an altercue continuum, it is feasible to focus on those categorizations that are easily understood because they relate to comprehending intuitively. Second, the possibilities beyond the initial easily understood categorizations represent research directions, whole systems of questions that warrant investigation. The significance of such investigations lies in how their findings can be used to flesh out the altercue continuum, how the altercue continuum can be used, and how they contribute to a better understanding of how reading works.

One obvious outcome of even a partially fleshed out version of an altercue continuum is that an indicator of comprehending can be drawn directly from a reader's processing during oral reading. By determining how and to what degree each altercue type predicts, or relates to, comprehending printed language, an intuitively clear indicator of comprehending can be constructed. Such an indicator would provide a basis for further investigations into comprehending, into how readers process printed language, and could serve as criterion for assessing the validity of other indicators of comprehending.

A major difficulty we face in reading is the valid assessment of reading comprehension, and an additional indicator, drawn directly from processing can aid in constructing more easily understood patterns of corroborating scores of reading performance. Standardized and informal reading inventories presently warrant revision of methods of interpreting oral reading response patterns (Powell and Dunkeld, 1971). The Reading Miscue Inventory

(Y. Goodman and C. Burke, 1972) provides a major step in this direction, but it is not easily and intuitively understood. A single weighting system for interpreting oral reading responses in terms of comprehending that is clear and simple to understand is a logical, theoretical outcome of the construction of an altercue continuum.

Discussion

We have presented the theoretical concept of the altercue continuum, a continuum of oral reading responses that deviate from the expected responses arranged in an order according to the way they relate to comprehending. Theoretical elements from miscue research were raised as principles for organizing altercue types according to comprehension. Theoretical scaling was cast in the form of correlation coefficients to provide direction for future empirical efforts. The coefficients under discussion are the speculated results of correlations between percents of altercue types and indicators of comprehension scores on comprehension tests.

Semantic acceptability, syntactic acceptability, and correction behavior were shown in relation to the altercue continuum. At one end of the continuum we postulated the existence of supercues, altercues that relate positively to comprehending. At the other end of the continuum we postulated the existence of pseudocues, altercues that relate negatively to comprehending. Between supercues and pseudocues is a benchmark on the altercue continuum indicated by entropicues, altercues that exhibit no relationship to comprehending.

If a valid reliable scale of relationships were established, as theoretically postulated in the concept of an altercue continuum, it would be possible to score oral readings easily as indicators of how a reader is comprehending printed language. Such a device would be quite useful in informal reading inventories, and in research on both oral reading and comprehension. We need better ways of inferring comprehension than are presently available, especially in view of the press to establish greater accountability in reading through testing and legislation.

The possibilities for significant investigations using the theory of the altercue continuum as a basis are many indeed. Each of the categorization systems of the Goodman Taxonomy of Oral Reading Miscues is a candidate; correction behavior, grapho-phonemic relationships, and the grammatical categories, to name a few. The retelling analysis techniques of miscue research beg to be sharpened with more accurate scaling devices, and the altercue continuum is a candidate for use here. Relationships between retelling performance and altercues can be assessed using indicators of the strength of relationships between the percents of altercue types and other comprehension indicators such as cloze scores and conventional tests. The altercue continuum theory can be turned back upon cloze performance and conventional tests to more accurately define and distinguish the inherent processes. We offer the theory of the altercue continuum as a challenge to inquiry by researchers. Does it really exist? Is the meager evidence available compelling, or does it wet the appetite for disproof? Where will it lead us in research on reading? Where can it lead us? These are questions we hope will spawn further investigation.

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Figure 1

THE ALTERCUE CONTINUUM:
A THEORETICAL SYSTEM FOR CLASSIFYING
ALTERCUES ACCORDING TO THEIR RELATIONSHIPS
TO COMPREHENDING PRINTED LANGUAGE

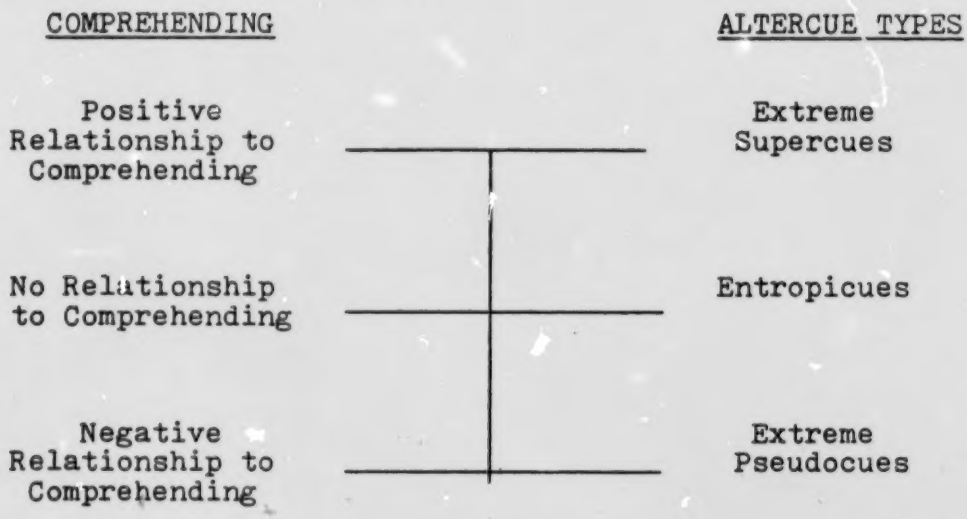

Figure 2

THE ALTERCUE CONTINUUM
AND SEMANTIC ACCEPTABILITY

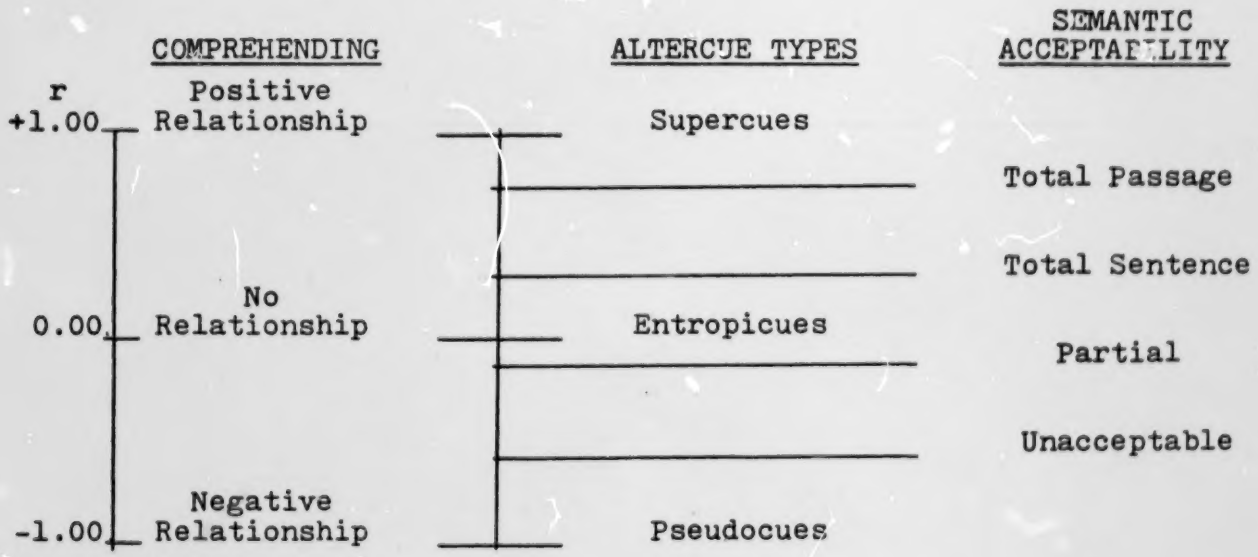

Figure 3

THE ALTERCUE CONTINUUM
AND SYNTACTIC ACCEPTABILITY

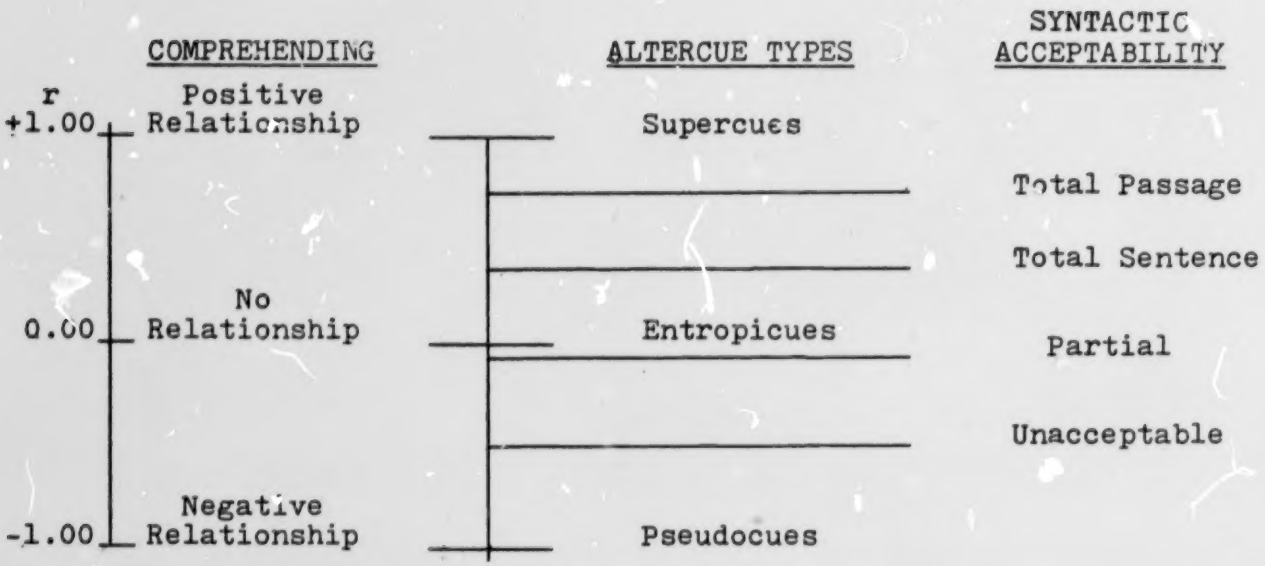

Figure 4

THE ALTERCUE CONTINUUM
AND CORRECTION BEHAVIOR